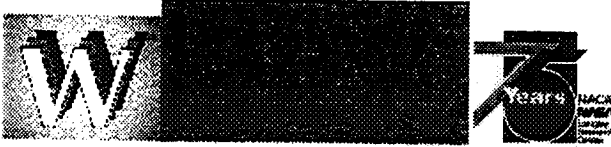


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## **Use of World Wide Web and NCSA Mosaic at Langley**

**CSTC Workshop, H. J. Reid Conference Center, 06/16/94**

*Michael Nelson, Information Systems Division*

<http://blearg.larc.nasa.gov/~mln/cstc/>



## Use of World Wide Web and NCSA Mosaic at Langley

- A Brief History of WWW at Langley Research Center
- The Impact of WWW at Langley
- Various Projects That Have Used WWW Successfully
  - Technology Opportunities Showcase
  - Langley Distributed Active Archive Center – EOSDIS
  - Langley Technical Report Server
  - Langley High Performance Computing and Communications K-12 Program
  - COSMIC Replacement
- The Future of WWW at Langley
- What's Next?



## A Brief History of World Wide Web (WWW) at Langley

### *Langley's Leadership Role*

- Langley Home Page became public on July 25, 1993
- The initial set of pages were quickly followed by a number of other contributors
- The Langley Home Page is almost a year old
- The Langley Home Page was the **first** NASA center home page
- Why is the "75 Years" logo used?
  - To remind ourselves and others that leading the way is nothing new for Langley
  - And while the technology may be new, the innovative spirit is not

### *NASA's Leadership Role*

- Archie Warnock and Jim Gass of GSFC lead NASA Home Page effort, with input from all of the centers
- Communication through the NASA USENET newsgroup, [nasa.infosystems.www](http://nasa.infosystems.nasa.gov)
- The first version of the NASA Home Page became public on September 8, 1993.
- NASA continues to lead federal agencies in deployment and use of WWW
- The NASA Web is a model for grass-roots involvement and inter-agency collaboration



## Charateristics of the Langley Web

### *Architecture of the Langley Web*

- Canonical list – “one stop shopping”
- Logically central, physically distributed
- Langley home page is largely a collection of pointers to other WWW servers at Langley and beyond
- Macs, PCs, and UNIX workstations have HTTP servers

### *The Langley Web Benefits From a Large Number of Contributors*

- Over 20 public HTTP servers (plus several others in testing or private)
- Everyone is responsible for maintaining the information they know the most about
- It encourages experimentation
- Everyone is involved with the new information distribution methodology: Its not just "send me an e-mail", its now also "send me the URL"



## Impact of World Wide Web at Langley

### *No Longer the "Best Kept Secret in the Government"*

- Statistics not kept until August 27, 1993
- Number of Langley home pages served: **0096410**
- At one point, the Langley home page was the "18th Most Linked to Home Page" (source: a Univ. of Washington Web Crawler)
- 797000+ HTTP connections with main Langley WWW server
- Accesses to the main Langley WWW server ([www.larc.nasa.gov](http://www.larc.nasa.gov))
  - 1700+ Langley Computers
  - 5100+ NASA Computers
  - 62000+ Computers World-Wide
- [www.larc.nasa.gov](http://www.larc.nasa.gov) is currently a non-dedicated, SPARCstation IPX, 64 Mbytes memory, 1.5 Gbytes disk

### *What is the Impact on the WWW Users?*

- Move from zero-sum to non-sum information distribution model
- Perhaps most importantly, connecting:
  - People with technologies
  - People with people



## Some Langley Projects that have employed WWW

*These Projects Have Increased Awareness and/or Usage with WWW*

- Technology Opportunities Showcase (TOPS)
- Langley EOSDIS Distributed Active Archive Center
- Langley Technical Report Server (LTRS)
- High Performance Computing and Communications K-12 Program
- COSMIC Replacement

*Important Notes About the Above Projects*

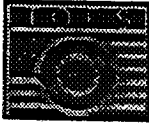
- Each represent “firsts” in their respective areas
- The projects are accessible through a common interface

*A Number of Branches, Divisions, Groups, Teams, and Initiatives Use WWW*

- Check the Langley home page for a complete and current list!



## Technology Opportunities Showcase

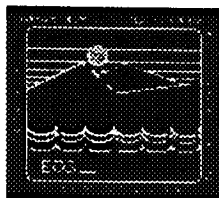


### *A Diverse and Dynamic N-team Assembled to Construct the TOPS Database*

- Number of TOPS home page visitors since 6/01/94: **0000457**
- TOPS builds upon other on-line databases, such as the X.500 phone book information, the Langley Technical Report Server, and existing Langley organization home pages.
- Team members: Kennie Jones (ISD), Jim Fenbert (ASAD), Kathy Stacy (ISD), Gretchen Gottlich (PRMO), Kurt Severance (ISD), Michael Nelson (ISD), Rick Hoff (STID), Dan Axelrad (STID co-op), Chris Matthews (CSC), David Bianco (CSC), Tricia Smith (ISD)
- Others latered contributed tours, reports and other information
- Features: all data sheets; keyword searching; photographs; "clickable" TOPS floorplan; automated metrics; and on-line requests for more information forms
- POC: Kennie Jones, K.H.JONES@LaRC.NASA.GOV, 864-6720
- <http://www.larc.nasa.gov/tops/tops.html>



## Langley Distributed Active Archive Center (DAAC)



*A Component of the Earth Observing System Data Information System (EOSDIS)*

- The Langley DAAC uses a home page to:
  - Increase awareness of the Langley DAAC
  - Provide various documentation sets
  - Provide user services information
  - Launch the innovative *Langley DAAC Data Ordering System* X Window System/Motif client
- Some projects currently served with DAAC: ERBE, SAGE, FIRE, SRB, ISCCP
- DAAC use of WWW has enabled several hundred more data set transfers
- POC: Roy Dunkum, R.C.DUNKUM@LaRC.NASA.GOV, 864-6589
- <http://eosdis.larc.nasa.gov/>





## The Langley Technical Report Server (LTRS)



*LTRS is an Experimental Report Distribution Project*

- Distributes “**unclassified, unlimited**” technical reports and papers
- Began January 1993 as an Anonymous FTP server only – (WAIS searching adding shortly thereafter)
- In the first 6 months (1/93 – 7/93), 2400+ reports distributed (pre- WWW)
- WWW enabled integrated searching and retrieving in October 1993
- As of 6/94, 10000+ reports distributed
- WWW provides a more intuitive and friendly interface to LTRS
- LTRS concept is being replicated across NASA via the NASA Technical Report Server (NTRS)
- RPPB (former – Technical Editing Br.) provides formal publications; others are contributed by the authors
- LTRS team members: Michael Nelson (ISD), Gretchen Gottlich (PRMO), David Bianco (CSC)
- POC: Michael Nelson, M.L.NELSON@LaRC.NASA.GOV, 864-8511
- <http://techreports.larc.nasa.gov/ltrs/ltrs.html>



## The Langley High Performance Computing and Communications K-12 Program



*The Langley HPCCP K-12 Program is Active!*

- Five area high schools are currently class C registered networks on the internet (e.g., *patriot.denbigh.nn.k12.va.us* is a valid Internet address)
- Three new schools are scheduled to be online this fall
- Each school currently receives its network connection from Langley over standard phone lines, and has a collection of donated Sun UNIX workstations and Apple Macintoshes
- The teachers are learning about computation, and integrating it into the curriculum
- All volunteer effort: Gary Warren (FMAD), Leon Clancy (ICASE), Kelvin Edwards (AS&M), plus others

*The Langley HPCCP K-12 Program Has Received Broad National Recognition*

- The Langley K-12 program is a fixture on educational WWW pages
- The Langley host machine for K-12 has registered over 20000 individual file accesses
- POC: Gary Warren, G.P.WARREN@LaRC.NASA.GOV, 864-2162
- <http://k12mac.larc.nasa.gov/hpcck12home.html>



## **A Langley COSMIC Replacement is Planned**

*The WWW is a Natural Medium for Langley Computer Program Distribution*

- A prototype is planned for this summer
- All non-sensitive, classified, or controlled programs would be available for free and open distribution
- Inspired by Oak Ridge National Lab's Netlib, which processed over 1.8 million requests in 1993
- Implemented by a TAG-lead N-team
- Will build upon work already done with the Langley Technical Report Server
- Sample codes are sought
- POC: Dan Sydow, P.D.SYDOW@LaRC.NASA.GOV, 864-3180



## The Future of WWW and Mosaic at Langley?

### *Complete the Langley Web*

- Currently, only a portion of Langley's activities are represented
- Everyone should be able to maintain at least minimal information about their organization or project
- Automated inclusion of on-line organization trees, functional statements, etc.

### *Further in the Future...*

- A wider choice of WWW clients, both commercial and freeware
  - Mosaic has been licensed to several companies for commercial development
  - NCSA Mosaic will continue to develop and remain freely available
- Tighter integration of all WWW documents
- Better searching tools
- Better authoring and data management tools
- Sophisticated "Knowledge Robots" that search, retrieve, and filter various information sources according to personal preferences



## Concluding Remarks

### *The World Wide Web and NCSA Mosaic Have Changed the How Langley Does Business*

- Langley and NASA lead in the adoption of WWW technology to accomplish our Mission
- Several projects and programs have already enjoyed tremendous success using WWW
- WWW is now an integral tool for technology transfer both out of and into Langley
- Langley is no longer a "secret"; and less and less means **Air Force** or **CIA**
- Langley must continue to increase the number of its WWW providers and users

### *Being on the WWW is Simple, Effective, and Fun!*

- Some instructions are available from the Langley home page
- Find a branch, project or other home page that you like and adapt it
- Come to the Internet Fair, June 28, H. J. Reid Conference Center, Langley Research Center, 8am – 3pm for more information
- And the next presentation will explain how to get started if you can't wait!